

# NUTRIENT APPLICATION REQUIREMENTS

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## I. GENERAL GUIDELINES

- A. This document addresses (1) **Setbacks for Nutrient Application**, (2) **Application Timing** for **all nutrients, organic and chemical**, and (3) **Temporary Field Stockpiling (staging) of Organic Materials**. Application of nutrients may vary depending on the crop, season, nutrient source, and weather conditions. A person applying nutrients shall use best management practices, including following these “Nutrient Application Requirements,” to maximize plant utilization efficiency as described in Section I-B of the *Maryland Nutrient Management Manual*, and minimize the potential for nutrient movement to sensitive areas and losses to surrounding water bodies, including surface and groundwater.
- B. This document does not supersede Maryland Department of the Environment Animal Feeding Operations regulations in COMAR 26.08.01 and 26.08.03.09, or the Maryland Department of the Environment Sewage Sludge Management regulations in COMAR 26.04.06 regarding the requirements for sewage sludge storage, buffer zones, and the incorporation of sewage sludge into the soil by the end of each working day.
- C. All materials that provide primary crop nutrients shall be included in, and managed by, a Nutrient Management Plan. These materials include chemical fertilizer, organic materials such as animal manure, sewage sludge, food processing wastes/residuals, spray irrigation from wastewater treatment plants, other waste streams containing nutrients, and soil conditioners/amendments.
- D. These Nutrient Application Requirements shall be followed by certified consultants in the development of nutrient management plans, and by operators and applicators during plan implementation in order to comply with COMAR 15.20.08.05G, H and I

## II. SETBACKS FOR NUTRIENT APPLICATION

- A. “Nutrient Application Setback” means a vegetated area of a prescribed width where nutrient-containing material may not be applied, as measured from the edge of surface water, including perennial and intermittent streams. An intermittent stream means a stream or the reach of a

stream that is below the local water table for at least some part of the year, and obtains its flow from both surface runoff and ground water discharge. Surface water does not include:

1. Ephemeral streams (defined as streams which flow only in direct response to precipitation in the immediate watershed and which have a channel bottom that is always above the local water table);
2. Irrigation and treatment ditches, as defined under “waters” in COMAR 15.20.08.03(B)(39),

and

3. Field ditches, which, for purposes of this exception, are defined as channelized waterways that, as provided in the USDA-NRCS National Cooperative Soil Survey, are not within:
  - a. A floodplain soil mapping unit;
  - b. A hydric soil unit and mapped as a narrow, elongated feature in a fluvial/floodplain position; or
  - c. A soil mapping unit that has a “B” slope class or steeper.

B. Effective January 1, 2014, a person who uses nutrients shall implement the following nutrient application setback requirements:

1. An application of crop nutrients using a broadcast method (*e.g.*, spinners, splashers) either with or without incorporation requires a 35-foot setback.
2. A directed spray application or the injection of crop nutrients requires a 10-foot setback.
3. Excepting perennial forage crops grown for hay or pasture, vegetation in the 10-foot setback area may not include plants that would be considered part of the crop grown in the field.
4. Pastures and hayfields are subject to a 10-foot nutrient application setback.
5. Nutrients may not be applied mechanically within the setback. Except as provided in subsection II.B.6, livestock shall be excluded from the setback to prevent direct deposition of nutrients within the setback.
6. As an alternative to fencing livestock from the setback area, a person shall work with the soil conservation district to develop and implement a Soil Conservation and Water Quality Plan. The plan shall include Best Management Practices (BMPs) such as stream crossings, alternative watering facilities, pasture management or other MDA-approved BMPs that are considered to be equally protective of water quality and stream health.
7. As an alternative to a nutrient application setback, MDA may approve other BMPs that it finds equally protective of water quality and stream health. Alternative BMPs may be approved based on established USDA, NRCS practice standards or research and demonstration by the University of Maryland, College of Agriculture and Natural Resources establishing the effectiveness of these practices.
8. Sacrifice lots (less than 75% grass or grass legume mix) shall maintain a 35-foot setback.

C. Operators are responsible for sediment and erosion control of stream crossing areas. Operators shall move livestock from one side of the stream to the other side only through stream crossings designed to prevent erosion and sediment loss. Operators shall gate crossing areas wider than 12

feet. Operators may allow livestock controlled access to streams for watering in accordance with USDA-NRCS Field Office Technical Guide standards and specifications.

### **III. APPLICATION TIMING**

- A.** The consultant, applicator, operator, and the certified farm operator shall comply with the following management requirements when recommending or applying nutrients throughout the year. These requirements separately address the use of (1) chemical fertilizers and (2) organic fertilizers. An organic fertilizer is derived from either a plant or animal product, and contains carbon, and one or more elements other than hydrogen and oxygen that are essential for plant growth. The consultant, applicator, operator, and certified farm operator shall follow the nutrient application recommendations for crops as specified in the *Maryland Nutrient Management Manual* Section I-B. Nutrients shall be applied as close to plant nutrient uptake period as possible.

#### **B. Spring and Summer (March 1 through September 9)**

1. A person may make a nutrient application during the spring-summer time period for an existing crop or a crop to be planted either during this time period or in the fall provided that, for each such crop, the rates and applications are made in accordance with recommendations found in Section I-B of the *Maryland Nutrient Management Manual*.
2. Except as provided in subsection III.B.3, organic nutrient sources shall be injected or incorporated as soon as possible, but no later than 48 hours after application.
3. If any of the following conditions exist, the material is not required to be injected or incorporated:
  - a. Livestock manures deposited directly by animals;
  - b. Permanent pastures;
  - c. Land used for hay production;
  - d. Fields containing highly erodible land as defined by USDA-NRCS in its Field Office Technical Guide;
  - e. Fields in which a current soil conservation and water quality plan or a current USDA/NRCS program requirement prohibits or otherwise restricts soil disturbance; or
  - f. Land where nutrients are applied to a growing crop through a spray irrigation system.

#### **C. Fall Application**

##### **1. Term Defined.**

In this regulation, the term “fall application” means:

- a. For the years 2012 through 2015, nutrients applied from September 10 through

November 15; and

- b. After July 1, 2016, nutrients applied:
  - (i) For Maryland in counties east of the Chesapeake Bay and the Susquehanna River, from September 10 through November 1; and
  - (ii) For Maryland in counties west of the Chesapeake Bay and the Susquehanna River, from September 10 through November 15.

## **2. Chemical Fertilizers**

A person may make a fall application of a chemical fertilizer for an existing crop or a crop to be planted during this time period provided that, for each such crop, the rates and applications are made in accordance with recommendations found in Section I-B of the *Maryland Nutrient Management Manual*.

## **3. Organic Fertilizers**

### **a. General Rules for Fall Application of Organic Sources**

- (i) Excepting poultry litter, a person may make a fall application of an organic nutrient source for an existing crop or a crop to be planted either during this time period or the following spring (before June 1) provided that, for each such crop, the rates and applications are made in accordance with paragraph III.C.3.(b) of this subsection and the recommendations found in Section I-B of the *Maryland Nutrient Management Manual*.
- (ii) A person may make a fall application of poultry litter for an existing crop or a crop to be planted during this time period provided that, for each such crop, the rates and applications are made in accordance with paragraph III.C.3.(b) of this subsection and the recommendations found in Section I-B of the *Maryland Nutrient Management Manual*.

### **b. General Conditions Relating to the Fall Application of Organic Nutrient Sources**

- (i) Except as provided in subparagraph III.C.3.b.(ii), if a person makes a fall application of an organic nutrient source, the person shall incorporate or inject the material. If the material is not injected, it shall be incorporated as soon as possible, but no later than 48 hours after application.
- (ii) If any of the following conditions exist, the material is not required to be injected or incorporated:
  - (aa) Livestock manures deposited directly by animals;
  - (bb) Permanent pastures;
  - (cc) Land used for hay production;
  - (dd) Fields containing highly erodible land as defined by USDA-NRCS

- in its Field Office Technical Guide;
- (ee) Fields in which a current soil conservation and water quality plan or a current USDA/NRCS program requirement prohibits or otherwise restricts soil disturbance; or
- (ff) Land where nutrients are applied to a growing crop through a spray irrigation system.
- (iii) A person may make a fall-application on pasture land, hay-land or other acreage under vegetative cover.
- (iv) A person making a fall-application of an organic nutrient source to fallow cropland shall plant a cover crop as soon as possible after application. The cover crop planting shall occur:
  - (aa) No later than November 15; and
  - (bb) After July 1, 2016, in counties east of the Chesapeake Bay and Susquehanna River, no later than November 5.
- (v) The rate of nutrient application shall be determined based on recommendations outlined in Section 1-B of the *Maryland Nutrient Management Manual* using either nitrogen or phosphorus-based criteria.
- (vi) If the application is phosphorus-based, the phosphorus application rate:
  - (aa) For a fall-seeded crop, shall be based on the phosphorus recommendations for that crop;
  - (bb) For crops to be planted the following spring (no later than June 1), may not exceed the one year crop removal rate of phosphorus for the spring-planted crop;
  - (cc) Shall follow the provisions of the Phosphorus Site Index, as they may otherwise apply; and
  - (dd) Shall result in an application rate of plant available nitrogen not exceeding 50 lbs. per acre.
- (vii) If the application is nitrogen-based, the rate of application for a fall-seeded crop shall be based on recommendations for plant available nitrogen as outlined in Section I-B of the *Maryland Nutrient Management Manual*. If the application is related to a crop that is to be planted the following spring (before June 1), the application of nitrogen may not exceed:
  - (aa) 50% of the plant available nitrogen recommended for the crop; and
  - (bb) 50 lbs. of plant available nitrogen per acre.

#### **4. Emergency Situations**

Applications required in emergency situations such as imminent overflow of a storage facility shall be managed in consultation with the Maryland Department of Agriculture. Operators in such situations shall contact the MDA regional nutrient management representative for guidance.

## **D. Winter Application**

### **1. Term Defined.**

In this regulation, the term “winter application” means:

- a. For the years 2012 through 2015, nutrients applied from November 16 through February 28 of the following year; and
- b. After July 1, 2016, nutrients applied:
  - (i) For Maryland counties east of the Chesapeake Bay and the Susquehanna River, from November 2 through February 28 of the following year; and
  - (ii) For Maryland counties west of the Chesapeake Bay and the Susquehanna River, from November 16 through February 28 of the following year.

### **2. Chemical Fertilizer**

As a general rule, a person may not make a winter application of a chemical fertilizer to cropland. However, for small grains and perennial forage crops, a person may apply nitrogen at green-up when tillering begins as recommended in the *Maryland Nutrient Management Manual* section I-B. In addition, a person may apply certain nutrients for greenhouse production and for other vegetable and small fruit crops listed in the *Maryland Nutrient Management Manual* Section I-B. The restriction on the application of chemical fertilizers during winter also does not apply to potash or liming materials.

### **3. Organic Fertilizer**

- a. A person may make a winter application of an organic nutrient source to cropland only if:
  - (i) The operation has inadequate storage (*i.e.*, the storage capacity will be exceeded before the March 1 winter application restriction);
  - (ii) The nutrient source is non-stackable; and
  - (iii) There is no other reasonable option to manage it.
- b. Any such application shall be made in accordance with Section I-B of the *Maryland Nutrient Management Manual*.
- c. The prohibition against making a winter application of an organic source does not apply to:
  - (i) The application of potash, liming materials, or manure deposited directly by livestock; or
  - (ii) A person, following organic guidelines, applying an organic nutrient for greenhouse production and for certain vegetable crops, small fruit crops, small grain crops, and cool season grass sod production listed in the *Maryland Nutrient Management Manual* Section I-B.
- d. Operators and generators of organic nutrient sources shall make plans for adequate storage or eliminate the need for a winter application before deadlines described in III. E.
- e. The following restrictions apply to any such winter application:
  - (i) Nutrient application is prohibited during the winter if the organic nutrient source is stackable (equal to or less than 60 percent moisture content, such as poultry litter) or

adequate storage is available.

- (ii) Nutrient application is prohibited when the soil is saturated, when the ground is covered with snow, or when the ground is hard-frozen.
- (iii) Nutrient application is prohibited to land with a slope greater than 7 percent.
- (iv) Rates of application shall be minimized and available acreage used to the greatest extent practical. In no case shall the application rate per acre exceed the one-year phosphorus removal rate for the next harvested crop.
- (v) Winter applications shall be by injection only and made into existing vegetative cover, small grain crops, or established hay fields and pastures. Injection into existing cover may be effected, for example, using vertical tillage equipment such as a Turbo-Till® or with a knifed injection system which minimizes soil disturbance and maximizes vegetative cover. Vegetative cover shall be maintained as such until March 1.
- (vi) Applications required in emergency situations such as imminent overflow of a storage facility shall be managed in consultation with the Maryland Department of Agriculture. Operators in such situations shall contact the MDA regional nutrient management representative for guidance.

#### **E. Prohibition against Winter Application**

- 1. Except as provided in subsections III.E.2 and III.E.3, after July 1, 2016, a person may not make a winter application of a nutrient source to agricultural land.
- 2.
  - a. The prohibition against making a winter application after July 1, 2016 does not apply to a nutrient source that originates from:
    - (i) A dairy or livestock operation with less than 50 animal units; or
    - (ii) A municipal wastewater treatment plan with a design flow capacity of less than 0.5 million gallons per day.
  - b. This exception to the general prohibition referenced in subsection III.E.1 expires after the winter application that ends on February 28, 2020.
- 3. The prohibition against making a winter application does not apply to potash, liming materials, or manure deposited directly by livestock. A person may make a winter application of certain nutrients for greenhouse production and for certain vegetable crops, small fruit crops, small grain crops, and cool season grass sod production listed in the *Maryland Nutrient Management Manual* Section I-B.

### **IV. TEMPORARY FIELD STOCKPILING (STAGING) FOR STACKABLE ORGANIC NUTRIENT SOURCES** (equal to or less than 60% moisture content)

#### **A. General Provisions**

- 1. When other immediate use options and alternatives are not available, temporary field stockpiling (staging) of organic nutrient sources is allowed. Temporary field stockpiling

- (staging) provides greater environmental protection than a fall or winter application of nutrients or applying nutrients too far ahead of normal planting time and crop uptake.
2. To minimize the duration of temporary field stockpiling (staging), operators shall coordinate with integrators to schedule cleanouts as close to spring planting as possible, thereby providing a source of nutrients that is in phase with crop nutrient needs.
  3. Existing storage shall be fully used prior to stockpiling material in the field.
  4. Any material staged in a temporary field stockpile shall be land applied in the first spring season following the placement of the stockpile.
- B. The temporary field stockpiling (staging) shall be located:
1. If a vegetated buffer is not in place, at least 100 feet from any surface water as defined in COMAR 15.20.08.03(B)(39) and any irrigation or treatment ditches; and if a vegetated buffer is in place, at least 35 feet from any such water;
  2. At least 100 feet from wells, springs, and wetlands; however, if the well is located down gradient from the temporary field stockpiling (staging) area, at least 300 feet from the well;
  3. At least 200 feet from any residence outside the operator's property;
  4. Outside flood prone areas and areas subject to ponding;
  5. If located on more than a 3 percent grade slope and no diversion installed, no farther than 150 feet from the top of the slope.
- C. Poultry litter and other materials shall be stacked at least 6 feet high and peaked to prevent precipitation from soaking into the pile.
- D. Materials shall be field stockpiled (staged) temporarily in a manner that prevents nutrient runoff.
- E. Temporary field stockpiling (staging) locations for subsequent piles should stay at the same location, rather than be moved from place to place.
- F. All nutrients shall be removed from the temporary field (staged) stockpile and the ground area thoroughly scraped or cleaned when the application of the nutrients takes place.
- G. Temporary field stockpile (staged) areas shall be restored to its original condition and, if necessary, reseeded with grass or an agronomic crop to facilitate nutrient uptake.